

**Claims:**

1. Method of obtaining  $^{68}\text{Ga}$  by contacting the eluate from a  $^{68}\text{Ge}/^{68}\text{Ga}$  generator with an anion exchanger comprising  $\text{HCO}_3^-$  as counterions and eluting  $^{68}\text{Ga}$  from said anion exchanger.  
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2. Method according to claim 1 wherein the  $^{68}\text{Ge}/^{68}\text{Ga}$  generator comprises a column comprising titanium dioxide.
- 10 3. Method according to claim 1 wherein 0.05 to 5 M HCl is used to elute  $^{68}\text{Ga}$  from the  $^{68}\text{Ge}/^{68}\text{Ga}$  generator.
4. Method according to claim 2 wherein 0.05 to 0.1 M HCl is used to elute  $^{68}\text{Ga}$  from the  $^{68}\text{Ge}/^{68}\text{Ga}$  generator.  
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5. Method according to claims 1 to 4 wherein water is used to elute  $^{68}\text{Ga}$  from the anion exchanger.
6. Method according to claims 1 to 5 wherein the anion exchanger is a strong anion  
20 exchanger comprising quaternary amine functional groups.
7. Method according to claims 1 to 6 wherein the anion exchanger is a strong anion exchange resin based on polystyrene-divinylbenzene.
- 25 8. Method of producing a  $^{68}\text{Ga}$ -radiolabelled complex by reacting  $^{68}\text{Ga}$  obtained by the method according to claims 1 to 7 with a chelating agent.
9. Method according to claim 8 wherein the chelating agent is a macrocyclic chelating agent.  
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10. Method according to claims 8 to 9 wherein the chelating agent comprises hard donor atoms, preferably O and N.

11. Method according to claims 8 to 10 wherein the chelating agent is a bifunctional chelating agent
12. Method according to claim 11 wherein the chelating agent is a bifunctional chelating agent comprising a targeting vector selected from the group consisting of proteins, glycoproteins, lipoproteins, polypeptides, glycopolypeptides, lipopolypeptides, peptides, glycopeptides, lipopeptides, carbohydrates, nucleic acids, oligonucleotides or a part, a fragment, a derivative or a complex of the aforesaid compounds and small organic molecules.
13. Method according to claims 8 to 12 wherein the reaction is carried out using microwave activation.
14. Method according to claims 8 to 13 for the production of  $^{68}\text{Ga}$ -radiolabelled PET tracers.
15. Kit for the preparation of  $^{68}\text{Ga}$  from a  $^{68}\text{Ge}/^{68}\text{Ga}$  generator, which comprises a generator column and a second column that comprises an anion exchanger comprising  $\text{HCO}_3^-$  as counterions.
16. Kit according to claim 15 further comprising means to couple the columns in series.
17. Kit according to claims 15 to 16 further comprising aqueous  $\text{HCl}$  to elute the  $^{68}\text{Ga}$  from the generator column and/or water to elute the  $^{68}\text{Ga}$  from the anion exchanger column, preferably, the  $\text{HCl}$  and the water being aseptically and in a hermetically sealed container.
18. Kit according to claims 15 to 17 further comprising a chelating agent, preferably a bifunctional chelating agent.
19. Use of a kit according to claim 18 for the production of  $^{68}\text{Ga}$ -radiolabelled PET tracers.